

IN THE CLAIMS

Please amend the claims, without prejudice, to read as follows:

1 (Currently Amended). An axial flow rotary blood pump including an impeller adapted to be magnetically rotated within a housing by the interaction of magnets disposed on or in the impeller and stators disposed on or in the housing, ~~characterised~~ characterized in that said impeller includes at least one support ring supporting a plurality of blades, and a hydrodynamic bearing that operates at least axially and radially in respect of an axis of rotation of the impeller.

2 (Original). The axial flow rotary blood pump of claim 1 wherein said hydrodynamic bearing exclusively suspends said impeller within a cavity.

3 (Original). The axial flow rotary blood pump of claim 1, wherein said hydrodynamic bearing is formed by angular pads.

4 (Original). The axial flow rotary blood pump of claim 1, wherein said support ring includes the hydrodynamic bearing.

5 (Original). The axial flow rotary blood pump of claim 1, wherein said support ring includes the magnets.

6 (Currently Amended). The axial flow rotary blood pump of claim 1, wherein said plurality of blades extend from the support ring towards the centre of the ~~pump~~ housing.

7 (Currently Amended). The axial flow rotary blood pump of claim 1, wherein ~~said the~~ said blades have a decreasing pitch to straighten blood flowing out of the ~~pump~~ housing.

8 (Currently Amended). The axial flow rotary blood pump of claim 1, wherein said ~~pump housing~~ is spider-less and ~~sealless seal-less~~.

9 (Original). The axial flow rotary blood pump of claim 1, wherein said impeller, when in use, experiences retrograde blood flow around its periphery.

10 (Cancelled).

11 (New). An axial flow row rotary blood pump including: an impeller adapted to be magnetically rotated within a housing by the interaction of magnets disposed on or in the impeller and stators disposed on or in the housing, wherein said impeller includes at least one hydrodynamic thrust bearing and wherein said impeller includes at least one channel formed in the outer surface of the impeller to propel blood through the housing, when impeller is rotated within the housing.

12 (New). An axial flow blood pump of claim 11, wherein at least one hydrodynamic thrust bearing is formed by the interaction of a portion the outer surface of the impeller and a portion of the inner surface of the housing.

13 (New). An axial flow blood pump of claim 12, wherein one of the hydrodynamic thrust bearing generates a thrust force which includes an axial component relative to the axis of rotation.

14 (New). An axial flow blood pump of claim 12, wherein one of the hydrodynamic thrust bearing generates a thrust force which includes a radial component relative to the axis of rotation.

15 (New). An axial flow blood pump of claim 12, wherein at least one hydrodynamic thrust bearing is formed by interaction of a wedge shaped member disposed on the outer surface of the impeller.